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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/073,931
Filing Date: February 14, 2002
Appellant(s): DOSHI ET AL.

MAILED

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GROUP 2800

John E. Curtin, Reg. No. 37,602
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed February 28, 2005.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

No amendment after final has been filed.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct, since it is essentially a copy of the specification.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Not applicable.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,726,788	Fee et al	3-1998
6,331,906 B1	Sharma et al	12-2001
6,624,927 B1	Wong et al	9-2003

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter, which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

All of the independent claims (claims 1, 6 and 11) have been amended to include "non-amplified optical signals." There is no original disclosure to provide support for this amendment, therefore these claims and the claims, which depend from them (i.e. claims 2-5, 7-10 and 12-15), are considered to contain new matter, causing the claims to be properly rejected under 35 U.S.C. 112, first paragraph.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4-6, 9-11, 14 and 15 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Fee et al (U.S. patent 5,726,788).

Fee et al disclose the claimed invention of a connection device or router comprising one or more processing units (f1-f7) and an optical switch (308) adapted to connect at least one of the units to one or more optical signals based on a characteristic of each signal.

With respect to claims 4, 5, 9, 11 and 14, please note Figures 3 and 7, and their accompanying text, especially at column 4, line 46 to column 5, line 10, as well as column 5, line 64 to column 6, line 7.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2, 7, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fee et al (U.S. patent 5,726,788) in view of Wong et al (U.S. patent 6,624,927 B1).

Fee et al disclose the claimed invention as described above, except for explicitly including various specific processing units, such as a Raman pump. However, Fee et al does teach the use of an amplifier (col. 4, lines 49-50) and/or pump insertion (col. 4, lines 58-59) as processing units, as part of a non-exclusive representative list of optical modules for processing information carrying optical signal(s) (col. 4, lines 46-48). Wong et al teaches that it is well known to utilize a Raman pump for the purpose of amplifying optical signals in an optical communications network, so that the power of the signals is maintained at a constant level, thereby avoiding signal degradation due to lost signal power. Wong et al further teaches that various Raman pumping arrangements may be used to pump any suitable optical fiber communications system, such as fiber in optical

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network equipment including add/drop modules or optical switches. (Wong et al at col. 3, lines 49-59). Therefore, it would have been well known to one of ordinary skill in the art to utilize the well known Raman pump of Wong et al for the purpose of amplifying optical signals and/or pump insertion, thereby providing necessary signal processing functions as taught by Fee et al. Please especially note Fee et al at column 2, line 33 to column 3, line 16; as well as column 4, line 40 to column 5, line 10.

4. Claims 3, 8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fee et al (U.S. patent 5,726,788) in view of Sharma et al (6,331,906 B1).

Fee et al disclose the claimed invention as described above, except for explicitly including various specific processing units, such as an optical-electrical-optical regenerator. However, Fee et al does teach the use of a modulation reshaper and the need for a regenerating process operation (note col. 4, lines 5-17), as part of necessary signal processing functions. Sharma et al teaches that it is well known to utilize an optical-electrical-optical regenerator for the purpose of reshaping optical signals in an optical communications network through techniques for restoration of network services in the event of a failed fiber link (e.g. a break in a fiber or a failure of an active element such as a fiber amplifier) and the use of optical switching to effect such restoration (note Sharma et al at col. 1, lines 53-58). Therefore, it would have been well known to one of ordinary skill in the art to utilize the well known optical-electrical-optical regenerator of Sharma et al for the purpose of reshaping optical signals and affecting signal restoration, thereby providing necessary signal processing functions as taught by Fee et

al. Please especially note Fee et al at column 2, line 33 to column 3, line 16; as well as column 4, line 40 to column 5, line 10.

(11) Response to Argument

Applicant's arguments filed in the Appeal Brief on 2-28-05 have been fully considered but they are not well received.

In response to the Applicant's argument that the term "non-amplified" relating to the optical signals is supported by the original disclosure is not well met. The Examiner reasserts that the original disclosure does not support the term "non-amplified" relating to the optical signals. The Applicant directs attention to the references in the specification of the ultra-long range optical fiber networks and what they are capable of doing, mainly transmitting optical signals over extremely long distances. The Applicant offers no evidence that these networks utilize non-amplified optical signals, and seems to imply that the "non-amplified" term is an inherent property of the networks. However, in order for the networks to inherently have this property, wherein an optical signal is non-amplified, it would have to be this way without exception, in other words, the networks would never need amplification of the optical signals. "Inherency may not be established by probabilities or possibilities." (MPEP 2163.07(a); *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (fed. Cir. 1999)). The Applicant's have not stated that the optical fiber ultra-long range network never needs an amplified optical signal, i.e. non-amplified optical signal. In fact, the Applicant has indicated that the optical signals are indeed amplified. Note page 1 of the Appeal Brief, paragraph V.

Summary of the Invention (which is directly taken from the Applicant's specification, page 1). Further, on page 8 of the Applicant's Appeal Brief, paragraph VII. Arguments, indicates that "...it is not always necessary to amplify an optical signal..." which clearly implies that the opposite is true as well, in that the optical signals are indeed amplified, at least sometimes. Therefore, the optical signals being "non-amplified" is not an inherent property or state of operation for the networks. The prior art bears this out. Ultra long-range optical fiber networks do indeed amplify the optical signals because the signals will lose strength, even if they are not processed by processing units and optical switches. The fibers alone will affect the strength of the signals, thereby degrading the signal as it travels over the optical fibers, i.e. links. In conclusion of this argument, it is not a "fact" as the Applicant would have the Examiner believe that the ultra-long range optical fiber utilizes non-amplified optical signals just because it is an ultra-long range optical fiber network. Also, the Examiner is uncertain what the Applicant means when they state in their Appeal Brief, at page 8, paragraph VII (A.), "Because of this fact (and others)..." when no facts, let alone others, are not provided.

In response to the Applicant's argument that Fee et al does not teach the claimed invention, as amended, is not well received due to the "New Matter" rejection with respect to the amendment to the claims. According to the Applicant's disclosure, it would appear that their invention would work equally well with or without amplified signals, and does not distinguish one way or the other. Further, the Applicant's own disclosure stipulates that the optical signals for ultra long networks need "simple amplification." Hence, the Applicant's invention receives and operates with optical

signals that have been amplified. The Applicant's disclosure does teach that their invention does not require "processing" the optical signals, which may or may not include some sort of optical amplification, such as utilizing a Raman pump (as described in the Applicant's specification at page 7, paragraph [0026]). However, "processing" the optical signal, and providing "simple amplification" to the optical signal, are not the same thing. Since Fee et al provides only "simple amplification" to the optical signals, before the signals reach the optical switch, much like the Applicant's invention. Therefore, the prior art rejection in light of Fee et al is hereby maintained.

With respect to the amended limitation, "non-amplified" optical signal, even if this term were disclosed in the original disclosure, the prior art rejections would have been made and upheld by the Examiner. The claimed invention recites that the optical switch is "adapted to connect..." It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138. In the instant case, the amplifier of Fee et al is removable and the invention would function, though Fee et al does advise against this configuration for well known aspects of optical networks. These well known aspects include the fact that ultra-long range optical fiber networks require amplifying or boosting the optical signals, especially if the signals are to be processed in any way.

Further, and most importantly, in light of the Applicant's original disclosure, there is taught that simple amplification is completed in the optical fiber networks. If the Applicant's claimed invention is to have "non-amplified" optical signals, then they are not

referring to the simple amplification of the optical signals, but are referring to a processing of the optical signals through processing units, such as dispersion equalizers, Raman pumps, regenerators, optical amplifiers, etc., as described both in the Applicant's disclosure and Fee et al. When the amended claims, with the recited limitation of a "non-amplified optical signal" is read in light of the specification, especially in light of this interpretation, then it is fairly clear that the Applicant is confusing Fee et al's amplifier with a processing unit, as opposed to what it is, a simple amplification element. Note Fee et al, for example, at column 3, lines 64-65, wherein the "optical amplifier boosts the signal for further processing by the processing functions..." In other words the optical signals are strengthened, nothing more, by the amplifier 206 in Fee et al 's invention. Hence, "simple amplification" is provided by Fee et al, not "processing" such as regeneration for example. Since simple amplification is taught and defined as acceptable in the Applicant's disclosure and is often necessary in ultra-long range optical fiber networks, it stands to reason that Fee et al is allowed to simply amplify the optical signals as well. Therefore, as defined and set forth in the Applicant's disclosure, the recited amended limitation of "non-amplified" can not refer to, or cover in scope, the simple amplification of the optical signal. Consequently, the simple amplification provided in Fee et al's invention does not contradict the amended limitation of "non-amplified" optical signal.

On a secondary note, the Applicant's state in the Appeal Brief at page 9, paragraph VII(B.), "It is not necessary for the claimed invention to receive an amplified signal." This statement fails to definitively evince that their claimed invention does not or

can not receive an amplified optical signal. Since they do state that the optical fiber networks do indeed need simple amplification (Appeal Brief, page 1 and Specification page 1), it is doubtful to the Examiner that the Applicant's could make such a definitive statement.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., ULR (ultra-long range) optical fiber network having non-amplified optical signals received) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). No where in the claimed invention is recited a ULR network, therefore, even if the limitation "non-amplified" optical signals were inherent to these ULR networks, the Applicant's do not claim such a network.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Fee et al does not disavow the use of an optical-to-electrical-to-optical converter. Fee et al do teach that

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regeneration may be a selected signal processing operation upon the optical signal, and therefore a regeneration processing unit or module would obviously be required.

Sharma et al teach such a regenerating processing unit for an optical communication network system, wherein such unit is an optical-to-electrical-to-optical regenerator.

Since Fee et al teach that various module examples that provide various processing operations may be used, (clearly taught in column 4, line 46 to column 5, line 10), and that one of the processing operations includes "modulation reshaping," and Sharma et al teach that an exemplary way to provide modulation reshaping is to use an optical-to-electrical-to-optical converter or regenerator (note Sharma et al at col. 5, lines 43-52), it would have been obvious to one of ordinary skill in the art to use the converter or regenerator of Sharma et al in the invention of Fee et al. It is well established in the optical network art that when a signal is converted to an electrical signal, there is more control and flexibility offered. Hence, for the purpose of processing a signal as explained previously, utilizing what is taught by Sharma et al in Fee et al's invention would have been obvious to one of ordinary skill in the art. Please note in the Background of the Invention in Fee et al at col. 2, lines 18-25.

As for Fee et al stating that there is no conversion of an optical signal to an electrical signal and back to an optical signal, Fee et al is referring to the unnecessary step of conversion in order to process the optical signals, in the same manner as the Applicant's invention. The Applicant's invention does not require such a conversion in order to process the optical signals either, and yet an optical-to-electrical-to-optical converter is utilized as a processing unit plugged into the optical switch. Fee et al's


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invention operates, functions and is configured the same as the Applicant's invention (as described previously). Therefore, the combination of Fee et al's invention with the teaching of Sharma et al's invention would have been obvious to one of ordinary skill in the art and would not render Fee et al's invention unsatisfactory for its intended purposes.

Further, in response to applicant's argument that the disclosures of Fee et al and Sharma et al would not be combined because this would appear to render Fee et al's invention inoperable for its intended purpose, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Please note the above explanation regarding the combination of the references to Fee et al and Sharma et al.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

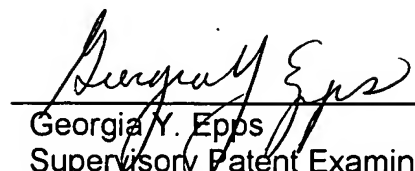

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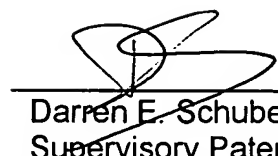
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